

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
2 December 2004 (02.12.2004)

PCT

(10) International Publication Number
WO 2004/105208 A1

(51) International Patent Classification⁷: H02J 3/00, 5/00,
H02M 7/00, 11/00, H01F 38/14, B60L 9/00

(74) Agent: BALDWIN SHELSTON WATERS; PO Box
5999, Wellesley Street, Auckland, 1001 (NZ).

(21) International Application Number:
PCT/NZ2004/000096

(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(22) International Filing Date: 21 May 2004 (21.05.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
526115 23 May 2003 (23.05.2003) NZ
529869 27 November 2003 (27.11.2003) NZ

(71) Applicant (*for all designated States except US*): AUCK-
LAND UNISERVICES LIMITED [NZ/NZ]; Level 10,
70 Symonds Street, Auckland, 1001 (NZ).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): HUSSMAN,
Stephan, Helmut [DE/DE]; Winkelsweg 40, 53175 Bonn
(DE). HU, Aiguo [NZ/NZ]; 150 Avondale Road, Avon-
dale, Auckland, 1001 (NZ).

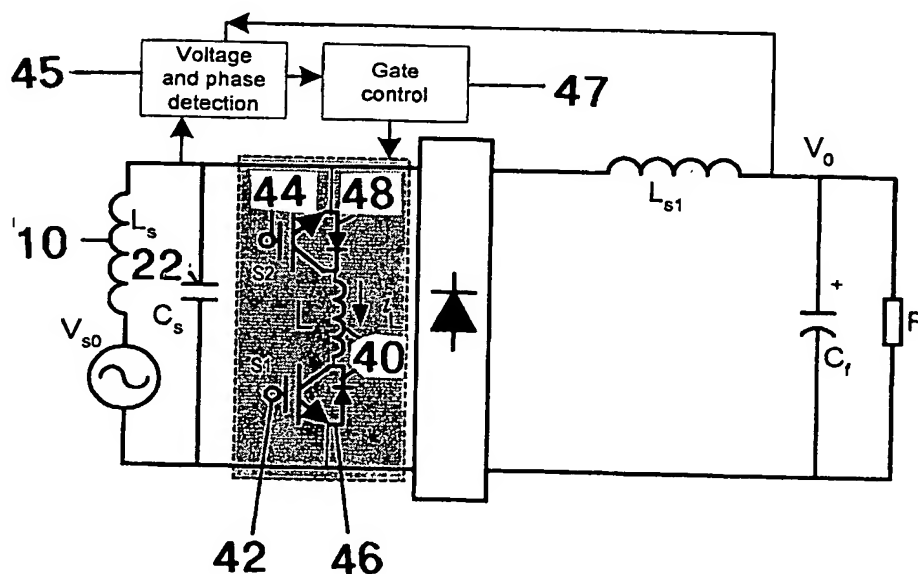
(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

[Continued on next page]

(54) Title: METHODS AND APPARATUS FOR CONTROL OF INDUCTIVELY COUPLED POWER TRANSFER SYSTEMS



(57) Abstract: A power pick-up for an Inductively Coupled Power Transfer (ICPT) system is provided having a resonant pick up circuit. The natural frequency of the pick-up circuit may be varied by controlling the conductance or capacitance of a variable reactive in the resonant circuit. The load being supplied by the pick-up circuit is sensed, and the effective capacitance or inductance of the variable reactive component is controlled to vary the natural resonant frequency of the pick-up circuit to thereby control the power flow into the pick-up to satisfy the power required by the load.



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.